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30. (New) The photovoltaic element according to Claim 29, wherein the concentration of the silane coupling agent is higher at a location in the encapsulant resin near the surface member.

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31. (New) The photovoltaic element according to Claim 30, wherein the concentration of the silane coupling agent is higher at a location near the photovoltaic element.--

REMARKS

Claims 14 and 16-31 are now in this application. Claims 14-19 have been amended to define still more clearly what Applicants regard as their invention, in terms which distinguish over the art of record. Claims 1 and 15 have been canceled without prejudice or disclaimer of subject matter. Claims 26-31 have been added to assure Applicants of a full measure of protection of the scope to which they deem themselves entitled.

Claim 14 is independent.

Initially, the typographical error objected to in Claim 19 has been emended.

Claims 1, 14 and 16-19 were rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patent 6,097,100 (Eguchi et al.) in view of U.S. Patent 5,641,997 (Ohta et al.), and Claims 1, 14-17 and 19, as being obvious from *Eguchi* in view of U.S. Patent 5,656,098 (Ishikawa et al.).

Cancellation of Claims 1 and 15 renders the rejections of those claims moot.

Independent Claim 14 is directed to a photovoltaic element encapsulated with an encapsulant resin. The encapsulant resin comprises an ultraviolet absorbing agent dissolved therein, and the dissolved ultraviolet absorbing agent has a concentration gradient in the direction of thickness of the encapsulant resin.

Eguchi relates to a resin-sealed semiconductor device, and to their manufacture. In the *Eguchi* approach, a semiconductor element is encapsulated with a resin composition containing an organic compound, which is either an organobromine compound, an organophosphorus compound or an organonitrogen compound, and has an inorganic filler, and a metal borate. This structure is said to provide a semiconductor element enjoying the same flame resistance as a conventional element encapsulated with a resin that contains halogen and an antimony compound, as well as enhanced reliability vis-à-vis moisture resistance and high-temperature resistance. At the portion cited particularly by the Examiner, *Eguchi* states that various additives, such as coupling agents, may be used in the resin (col. 7, lines 54 *et seq.*).

As recognized in the Office Action, *Eguchi* does not teach or suggest that an additive's concentration should have a gradient in the direction of thickness of the encapsulant resin, as recited in Claim 14. It is noted, moreover, that *Eguchi* relates to a semiconductor device, and does not relate specifically to a photovoltaic device.

Ohta relates to a plastic-encapsulated semiconductor device in which a semiconductor chip is positioned between encapsulating sheets, which each have a surface that is highly adhesive, and one that is less so. The highly adhesive surfaces are those which contact the chip, while the other surfaces contact a mold. Encapsulation is

performed by molding. The Office Action cited *Ohta* for showing an additive with a concentration gradient in the direction of a resin thickness. Even if *Ohta* is deemed to show all that it is cited for, however, the result of the proposed combination of that patent with *Eguchi* (even if that combination is assumed to be permissible) would not meet the terms of Claim 14. At the very least, neither of those patents relates specifically to photovoltaic devices, and it is submitted that even if the proposed combination is made, the result would not produce a photovoltaic device. Accordingly, Applicant submits that Claim 14 is allowable over any permissible combination of those two patents.

Ishikawa '098 relates to a photovoltaic conversion device, and to a method for its production. In the *Ishikawa '098* device, granules of a material different from those of a surface protection layer are provided, in that layer. The granules may have an average grain size of 0.002 - 20 microns, a surface density of from 0.2 to 0.9 or a density of from 0.001 to 0.5.

Ishikawa '098 is cited in the Office Action as showing a semiconductor element 1104b (see Fig. 11) encapsulated with a resin 1101a, 1101b and 1101c having an additive 1102a and 1102b distributed in the encapsulant with a concentration gradient in the direction of the resin thickness. Applicant respectfully points out, however, that in *Ishikawa '098*, the purpose of introducing the granules is for the granules to scatter light (see, for example, the Summary of the Invention, col. 2, lines 20-56). From this consideration it follows that the granules in the *Ishikawa '098* device are not dissolved in the resin in which they are embedded. Applicant submits that nothing in *Ishikawa '098* would teach or suggest to one of merely ordinary skill, the use of an additive, dissolve in

an encapsulant resin with a concentration gradient in the direction of the resin thickness, as recited in Claim 14. Even if *Ishikawa '098* and *Eguchi* are combined in the manner proposed in the Office Action (and assuming such combination would be permissible), the result of that combination would not include all the features recited in Claim 14. accordingly, Claim 14 is deemed to be clearly allowable over those two patents, taken separately or in combination.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from independent Claim 14, discussed above, and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "U. P. Diana", written over a horizontal line.

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VERSION MARKED TO SHOW CHANGES TO CLAIMS

1. (Canceled)

14. (Amended) A [semiconductor] photovoltaic element encapsulated with an encapsulant resin, [wherein an additive dissolved in] the encapsulant resin comprising an ultraviolet absorbing agent dissolved therein, wherein the dissolved ultraviolet absorbing agent has a concentration gradient in the direction of thickness of the encapsulant resin.

15. (Canceled)

16. (Amended) The [semiconductor] photovoltaic element according to Claim 14, wherein the additive is at least one selected from a silane coupling agent and an ultraviolet absorbing agent.

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17. (Amended) The [semiconductor] photovoltaic element according to Claim 14, wherein the concentration of the additive is higher at a location near the semiconductor element but lower at a location remote from the semiconductor element.

18. (Amended) The [semiconductor] photovoltaic element according to Claim 14, wherein the concentration of the additive is lower at a location near the semiconductor element but higher at a location remote from the semiconductor element.

19. (Amended) The [semiconductor] photovoltaic element according to Claim 14, wherein the additive is an adhesion.